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_		U.	S. PATENT DOCUMENTS			
EXAMINERS INITIALS	PATENT NO.	ISSUE DATE	PATENTEE	CLASS	SUBCLASS	FILING DATE
M	3,410,794	Nov 12, 1968	Li			
\mathcal{D}	3,960,703	Jun 01, 1976	Dielacher et al.			
\mathcal{M}	4,179,361	Dec 18,1979	Michlmayr			
M	4,188,285	Feb 12,1980	Michlmayr			
10	5,730,860	Mar 24, 1998	Irvine			
M	6,118,037	Sep 12, 2000	Piccoli et al.			
\mathcal{M}	6,215,037	Apr 10, 2001	Padin et al.			
111)	6,402,939	Jun 11, 2002	Yen et al.			
TO	6,423,881	Jul 23, 2002	Yang et al.			

		FORE	IGN PATENT DOCUMENTS			
EXAMINERS INITIALS	DOCUMENT NO.	PUBLICATION DATE	COUNTRY OR PATENT OFFICE	CLASS	SUBCLASS	TRANSLATION
1773	54041844	04 Mar 1979	Abstracts of Japan			
1	GB 2005299	19 Apr 1979	United Kingdom			
	55098123	25 Jul 1980	Abstracts of Japan			
100	DD 208628	04 Apr 1984	Germany			
	0 27 <u>5 855 A1</u>	27 Jul 1988	European Patent Office	 		
M	DE 39 40 428 A1	13 Jun 1991	Germany			
137	WO 98/56875	17 Dec 1998	WIPO			

OTHER REFERENCES

Barthomeuf, D., and B.-H. Ha, "Adsorption of Benzene and Cyclohexane on Faujasite-Type Zeolites," *J. Chem. Soc. Faraday Trans.*, **69**, pp. 2147-2157 (1973), Abstract only

EXAMINER	1)	111	1	DATE CONSIDERED	4/	11	1	<u> </u>
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FORM PTO-1449 LIST OF REFERENCES CITED BY APPLICANT	ATTY DOCKET NO. UMJ-116-D (UM-2172P2)	SERIAL NO. 10/613,131
	APPLICANT RALPH T. YANG ET AL	
	FILING DATE JULY 03, 2003	GROUP 1764
	OTHER REFERENCES	

Becke, A. D., "Density-functional thermochemistry. II. The effect of the Perdew-Wang generalizedgradient correlation correction," A Chem hys., 97, No. 12, pp. 9173-9177 (15 December 1992) Becke, A. D., "A new mixing of Harreg-Fock and local density-functional theories," J. Chem. Phys., 98, No. 2, pp: 1372-1377 (15 January 1)(93) Becke, A. D., "Density-functional thermochemistry. III. The role of exact exchanges," J. Chem. Phys., 98. No. 7, pp. 5648-5652 (1 April 1993) Chen, N., and R. T. Yang, "Ab Initio Molecular Orbital Study of Adsorption of Oxygen, Nitrogen, and Ethylene on Silver-Zeolite and Silver Halides," Ind. Eng. Chem. Res., 35, pp. 4020-4027 (1996) Cheng, L. S., and R. T. Yang, "Improved Horvath-Kawazoe Equations Including Spherical Pore Models for Calculating Micropore Size Distribution," Chem. Eng. Sci., 49, pp. 2599-2609 (1994), Abstract only Demontis, P., S. Yashonath, and M. L. Klein, "Localization and Mobility of Benzene in Sodium-Y Zeolite by Molecular Dynamics Calculations," J. Phys. Chem., 93, pp. 5016-5019 (1989) Doong, S. J., and R. T. Yang, "A Simple Potential-Theory Model for Predicting Mixed-Gas Adsorption," Ind. Eng. Chem. Res., 27, pp. 630-635 (1988) Eldridge, R. B., "Olefin/Paraffin Separation Technology: A Review," Ind. Eng. Chem. Res., 32, pp. 2208-2212 (1993) Fitch, A. N., H. Jobic, and A. Renourez, "Localization of Benzene in Sodium-Y Zeolite by Powder Neutron Diffraction," J. Phys. Chem., 90, pp. 1311-1318 (1986) Hao, J., T. Tanaka, H. Kita, and K. Okamoto, "The Pervaporation Properties of Sulfonyl-Containing Polyimide Membranes to Aromatic/Aliphatic Hydrocarbon Mixtures," J. Membr. Sci., 132, pp. 97-108 Hay, P. J. and W. R. Wadt, "Ab initio effective core potential for molecular calculations: Potentials for K to Au including the outernost core orbitals," J. Chem. Phys., 82, No. 1: pp. 299-310 (1 January 1985) Hay, P. J. and W. R. Madt, "Ab initio effective core potentials for molecular calculations. Potentials for the transition metals atoms oc to Hg," J. Chem. Phys., 82, pp. 270-283 (1 January 1985) Ho, W. S., G. Doyle, D. W. Savage, and R. L. Pruett, "Olefin Separations via Complexation with Cuprous Diketonate," Ind. Eng. Chem. Res., 27, pp. 334-337 (1988) Huang, H. Y., R. T. Yang, and N. Chen, "Anion Effects on the Adsorption of Acetylene by Nickel Halides." Langmuir, 15, pp. 7647-7652 (1999) Huang, H. Y., J. Padin and R. T. Yang, "Anion and Cation Effects on Selective Olefin Adsorption on Silver and Copper Halides: Ab Initio Effective Core Potential Study of π-Complexation," J. Phys. Chem. B., 103, pp. 3206-3212 (1999) Huang, H. Y., J. Padin and R. T. Yang, "Comparison of π-Complexations of Ethylene and Carbon Monoxide and Cu⁺ and Ag⁺," Ind. Eng. Chem. Res., 38, pp. 2720-2725 (1999) Hutson, N. D., B. A. Reisner, R. T. Yang, and B. H. Toby, "Silver Ion-Exchanged Zeolites Y. X and Low Silica X: Observations of Thermally Induced Cation/Cluster Migration and the Resulting Effects on Equilibrium Adsorption of Nitrogen," Chem. Mater., 12, pp. 3020-3031 (2000)

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EXAMINER			1			DATE CONSIDERED	7	[7		ī	
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	APPLICANT RALPH T. YANG ET AL			
	FILING DATE JULY 03, 2003	GROUP 1764		

	OTHER REFERENCES
107	Jarayaman, A, R. T. Yang, C. L. Munson and D. Chinn, "Deactivation of π -Complexation Adsorbents by Hydrogen and Rejuvenation by Oxidation," <i>Ind. Eng. Chem. Res.</i> , 40 , pp. 4370-4376 (2001)
TO	King, D. L, C. Faz and T. Flynn, "Desulfurization of Gasoline Feedstocks for Application in Fuel Reforming," SAE Paper 2000-01-0002, Soc. Automotive Engineers, pp. 9-13 (2000)
M	Kitagawa, T., T. Tsunekawa, and K. Iwayama, "Monte Carlo Simulation on Adsorptions of Benzene and Xylenes in Sodium-Y Zeolites," <i>Microporous Mater.</i> , 7, pp. 227-233 (1996)
10	Klemm, E., J. Wang, and G. A. Emig, "A Comparative Study of the Sorption of Benzene and Phenol in Silicalite, HAIZSM-5 and NaAIZSM-5 by Computer Simulation," <i>Microporous Mater.</i> , 26 , pp. 11-21 (1998)
M	Laboy, M. M., I. Santiago, and G. E. Lopez, "Computing Adsorption Isotherms for Benzene, Toluene, and p-Xylene in Heulandite Zeolite," <i>Ind. Eng. Chem. Res.</i> , 38 , pp. 4938-4945 (1999)
M	Larsen, S. C. A. Aylor, A. T. Bell and J. A. Reimer, "Electron Paramagnetic Resonance Studies of Copper lon-Exchanged ZSM-5," <i>J. Phys. Chem.</i> , 98 , pp.11533-11540 (1994)
	Lee, C., Yang, W. and Parr, R.G., "Development of the Colle-Salvetti correlation-energy formula into a functional of the electron density;" <i>Phys. Rev. B</i> , 37, No. 2, pp. 785-789 (15 January 1988)
10	Lewis, W. K., E. R. Gilliland, B. Chertow, and W. P. Cadogan, "Adsorption Equilibria - Hydrocarbon Gas Mixtures," <i>Ind. Eng. Chem.</i> , 42 , pp. 1319-1326 (1950)
M	Li, Norman N., "Separation of Hydrocarbons by Liquid Membrane Permeation," <i>Ind. Eng. Chem. Process Des. Dev.</i> , 10 , pp. 215-221 (1971)
100	Li, Y., and J. N. Armor, "Catalytic Combustion of Methane over Palladium Exchanged Zeolites," <i>Appl. Catal.</i> , B3 , Issue 4, pp. 275-282 (1994), Abstract only
M	Luo, Guohua et al., "Removal of thiophene from coke-oven benzene by selective adsorption on zeolites," Database CA [Online] Abstract No. 132:110289, Chemical Abstracts Service, Ranliao Huaxue Xuebao (1999)
M	O'Malley, P. J., and C. J. Braithwaite, "Ab Initio Molecular Orbital and Molecular Graphics Studies of Benzene Adsorption in NaY Zeolite," Zeolites, 15, pp. 198-201 (1995)
M	Padin, J., and R. T. Yang, "Tailoring New Adsorbents Based on π-Complexation: Cation and Substrate Effects on Selective Acetylene Adsorption," <i>Ind. Eng. Chem. Res.</i> , 36 , pp. 4224-4230 (1997)
M	Padin, J. and R. T. Yang, "New Sorbents for olefin/paraffin separations by adsorption via π -complexation: synthesis and effects of substrates," <i>Chem. Eng. Sci.</i> , 55 , pp. 2607-2616 ()
TO	Padin, J., R. T. Yang and C. L. Munson, "New Sorbents for Olefin/Paraffin Separations and Olefin Purification for C ₄ Hydrocarbons," <i>Ind. Eng. Chem. Res.</i> , 38 , pp. 3614-3621 (1999)
M	Parkinson, G., "Diesel Desulfurization Puts Refiners in a Quandary," Chemical Engineering, February 37, pp. 39-41 (2001)
M	Pellenq, R. JM., and D. Nicholson, "In-Framework Ion Dipole Polarizabilities in Non-Porous and Porous Silicalites and Aluminosilicates, Determined from Auger Electron Spectroscopy Data," <i>J. Chem. Soc. Faraday Trans.</i> , 89 , pp. 2499-2508 (1993), Abstract only
D	Reed, A. E., Weinstock, R.B. and Weinhold, F., "Natural population analysis," J. Chem. Phys., 83, No. 2, pp. 735-746 (15 July 1985)

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EXAMINER	10) U	D	ATE CONSIDERED	5/2	10	ر
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LIST OF REFER	RENCES CITED BY APPLICANT	ATTY DOCKET NO. UMJ-116-D (UM-2172P2)	SERIAL NO. 10/613,131	
		APPLICANT RALPH T. YANG ET AL		
		FILING DATE JULY 03, 2003	GROUP 1764	
		OTHER REFERENCES		
M	Rege, S. U., J. Padin and R. T. Yang Kinetic Separation," AIChE J., 44, No.	o. 4, pp. 799-809 (April 1998)		
P	Russo, T. V., R. L. Martin, P. J. Hay, pp. 17085-17087 (1995)			
M	Safarik, D. J., and R. B. Eldridge, "O Eng. Chem. Res., 37, pp. 2571-2581	l (1998)	•	
177	Salem, A. S. H. and H. S. Hamid, "R Adsorbents," Chem. Eng. Tech., 20,	pp. 342-347 (1997)		
M	Snurr, R. Q., A. T. Bell, and D. N. Th the Prediction of Adsorption Thermo- 5119 (1994)	dynamics of Benzene in Silicalite," J	J. Phys. Chem., 98, pp. 5111-	
M	Spencer, C. F., and S. B. Adler, "A C J. Chem. Eng. Data, 23, pp. 82-89 (1	1978)		
m	Takahashi, A., F. H. Yang and R. T. for Selective Aromatics Adsorption b	y π-Complexation," Ind. Eng. Chem	p. Res., 39 , pp. 3856-3867 (2000)	
111	Takahashi, A., R. T. Yang, C. L. Mur Diene/Olefin Separation," <i>Langmuir</i> ,	17 , pp. 8405-8413 (2001)	·	
M	Viruela-Martin, P., C. M. Zicovich-Wi Protonation Reaction of Propylene at Zeolites," <i>J. Phys. Chem.</i> , 97 , pp. 13	nd Isobutene by Acidic OH Groups (1713-13719 (1993)	of Isomorphously Substituted	
}	Wadt, W. R. and P. J. Hay, "Ab initio	effective core potentials for molecu	llar calculations: Potentials for	
	main-group elements Na to Bi," J. Cl			
911	Adsorption in Zeolite ZSM-5," J. Che.	rnest, "Removal of Thiophene Impurities from Benzene by Selective nem. Soc. Chem. Commun., pp. 1133-1134 (1991)		
M	Williams, D. E., and S. R. Cox, "Nonl Coulombic Interaction," Acta Crystall	logr., B40 , pp. 404-417 (1984)		
M	Woods, G. B., and J. S. Rowlinson, " Faraday Trans., 85, pp. 765-781 (198	89), Abstract only		
107	Wu, Z., S. S. Han, S. H. Cho, J. N. K Adsorbents for Ethane/Ethylene Sep	aration," Ind. Eng. Chem. Res., 36,	pp. 2749-2756 (1997)	
A. I-	Xie, You-Chang, and Y. Q. Tang, "Sr of Supports: Applications to Heteroge	contaneous Monolayer Dispersion o eneous Catalysis." Advances in Cat	f Oxides and Salts onto Surfaces	
M		w Sorbents for Olefin/Paraffin Separations by Adsorption via π-		
Yang, R. T., "Gas Separation by Adsorption Processes," Butterworths Series in Chemical Engine Chapter I-II: pp: 1-48 (1987,)				

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EXAMINER: Initial if reference considered, whether or not citation is in c	onformance with MPEP 609; Draw line through citation if not

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